

## CLAIMS

1. An optical multilayer film comprising a hard coat layer and a low refractive index layer comprising aerogel, which layers are laminated, in this order, directly or with another intervening layer on one surface of a base film comprising a transparent resin, wherein the refractive index  $n_H$  of the hard coat layer and the refractive index  $n_L$  of the low refractive index layer satisfy the following three formulae (1), (2) and (3),

$$\text{Formula (1) : } n_L \leq 1.37$$

$$\text{Formula (2) : } n_H \geq 1.53$$

$$\text{Formula (3) : } (n_H)^{1/2} - 0.2 < n_L < (n_H)^{1/2} + 0.2.$$

2. The optical multilayer film according to claim 1, wherein the refractive index  $n_H$  of the hard coat layer and the refractive index  $n_L$  of the low refractive index layer satisfy the following three formulae (4), (5) and (6),

$$\text{Formula (4) : } 1.25 \leq n_L \leq 1.35$$

$$\text{Formula (5) : } n_H \geq 1.55$$

$$\text{Formula (6) : } (n_H)^{1/2} - 0.15 < n_L < (n_H)^{1/2} + 0.15$$

3. The optical multilayer film according to claim 1 or 2, which has a reflectivity of not larger than 0.7% at a wavelength of 550 nm and a reflectivity of not larger than 1.5% at a wavelength in the range of 430 nm to 700 nm.

4. The optical multilayer film according to any one of claims 1 to 3, wherein the base film has a die line with a depth or height of not larger than 0.1  $\mu\text{m}$ .

5. The optical multilayer film according to any one of claims 1 to 4, wherein the transparent resin is selected from the group consisting of a polymer resin having an alicyclic structure, a cellulose resin and a polyester resin.

6. The optical multilayer film according to any one of claims 1 to 4, wherein the transparent resin is a polymer resin having an alicyclic structure.

7. The optical multilayer film according to any one of claims 1 to 6, which is an antireflection protective film provided in an optical member.

8. The optical multilayer film according to claim 7, which is a polarizing plate-protecting film.

9. A polarizing plate having an antireflection function comprising the polarizing plate-protecting film as claimed in claim 8, which further has a polarizing film laminated on the surface of the polarizing plate-protecting film, opposite to the surface on which the low refractive index layer is formed.

10. An optical product provided with the polarizing plate having an antireflection function as claimed in claim 9.